VGLA COE Organizer
Mathematics 7

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

7.1 The student will		
		compare
		fractions,
		decimals, and
		percents.
		order
		fractions,
		decimals, and
		percents,
		determine equivalent relationships between fractions, decimals, and percents, including scientific notation for numbers greater than 10.

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7.2 The student will simplify expressions that contain rational numbers (whole numbers, fractions, and decimals) and positive exponents, using		
		order of operations,
		mental mathematics, and
		appropriate tools.

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7.3 The student will identify and apply the following properties of operations with real numbers:		
a)		the commutative and associative properties for addition and multiplication;
b)		the distributive property;
c)		the additive and multiplicative identity properties;
d)		the additive and multiplicative inverse properties; and
e)		the multiplicative property of zero.

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7.4 The student will		
a)	solve practical problems using rational numbers	
		whole numbers,
		fractions,
		decimals, and
		percents;
b)	solve consumer-application problems involving	
		tips,
		discounts,
		sales tax, and
		simple interest.

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7.5 The student will formulate rules for and solve practical problems involving		
	basic operations with integers.	
		addition,
		subtraction,
		multiplication, and
		division

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7.6 The student will use proportions to solve practical problems, which may include scale drawings, that contain			
		rational numbers	
			whole numbers,
			fractions,
			decimals, and
		percents.	

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7.7 The student, given appropriate dimensions, will		
a)		estimate and find the area of polygons by subdividing them into
		rectangles and
		right triangles; and
b)		apply perimeter and area formulas in practical situations.

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7.8 The student will investigate and solve problems involving the volume and surface area of rectangular prisms and cylinders, using		
		concrete materials and
		practical situations to develop formulas.

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7.9 The student will		
		compare and contrast the following quadrilaterals:
		parallelogram,
		rectangle,
		square,
		rhombus, and
		trapezoid.
		use deductive reasoning and inference to classify quadrilaterals.

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7.10 The student will		
	identify and draw the following polygons:	
		pentagon,
		hexagon,
		heptagon,
		octagon,
		nonagon, and
		decagon.

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7.11 The student will		
		determine if geometric figures – quadrilaterals and triangles – are similar and
		write proportions to express the relationships between corresponding parts of similar figures.

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7.12 The student will		
		identify and graph ordered pairs in the four quadrants of a coordinate plane.

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7.13 The student, given a polygon in the coordinate plane, will		
		represent transformations - rotation and translation - by graphing the coordinates of the vertices of the transformed polygon and
		sketching the resulting figure.

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7.14 The student will		
		investigate and describe the difference between the probability of an event found through simulation versus the theoretical probability of that same event.

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7.15 The student will		
		identify and describe the number of possible arrangements of several objects, using a tree diagram or the Fundamental (Basic) Counting Principle.

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7.16 The student will create and solve problems involving			
		the measures of central tendency	
			mean,
			median,
			mode, and
		range of a set of data.	

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7.17 The student, given a problem situation, will collect, analyze, display, and interpret data, using a variety of graphical methods, including		
		frequency distributions;
		line plots;
		histograms;
		stem-and-leaf plots;
		box-and-whisker plots; and
		scattergrams.

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7.18 The student will		
		make inference, conjectures, and predictions based on analysis of a set of data.

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7.19 The student will represent, analyze, and generalize a variety of patterns, including arithmetic sequences and geometric sequences, with		
		tables,
		graphs,
		rules, and
		words in order to investigate and describe functional relationships.

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7.20 The student will		
		write verbal expressions as algebraic expressions and
		write sentences as equations.

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7.21 The student will use the following algebraic terms appropriately:		
		equation,
		inequality, and
		expression.

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7.22 The student will		
a)		solve one-step linear equations and inequalities in one variable with strategies involving inverse operations and integers, using
		concrete materials,
		pictorial representations, and
		paper and pencil: and
b)		solve practical problems requiring the solution of a one-step linear equation.